



Western  
Area Power  
Administration

# Draft Parker Davis and Intertie 10-Year Plan Meeting

July 15, 2019

Desert Southwest Region  
Phoenix, AZ



# WELCOME & INTRODUCTION



# AGENDA

1. Welcome & Introduction
2. Parker Davis and Intertie 10-Year Plan
3. Reserve Balances Report
4. Bouse Upgrade Project
5. Parker-Blythe #2 Rebuild
6. Estimated Rate Impact
7. Capital O&M (RRADs) Review
8. 10-Year Plan Next Steps



# Parker Davis & Intertie 10-Year Plan

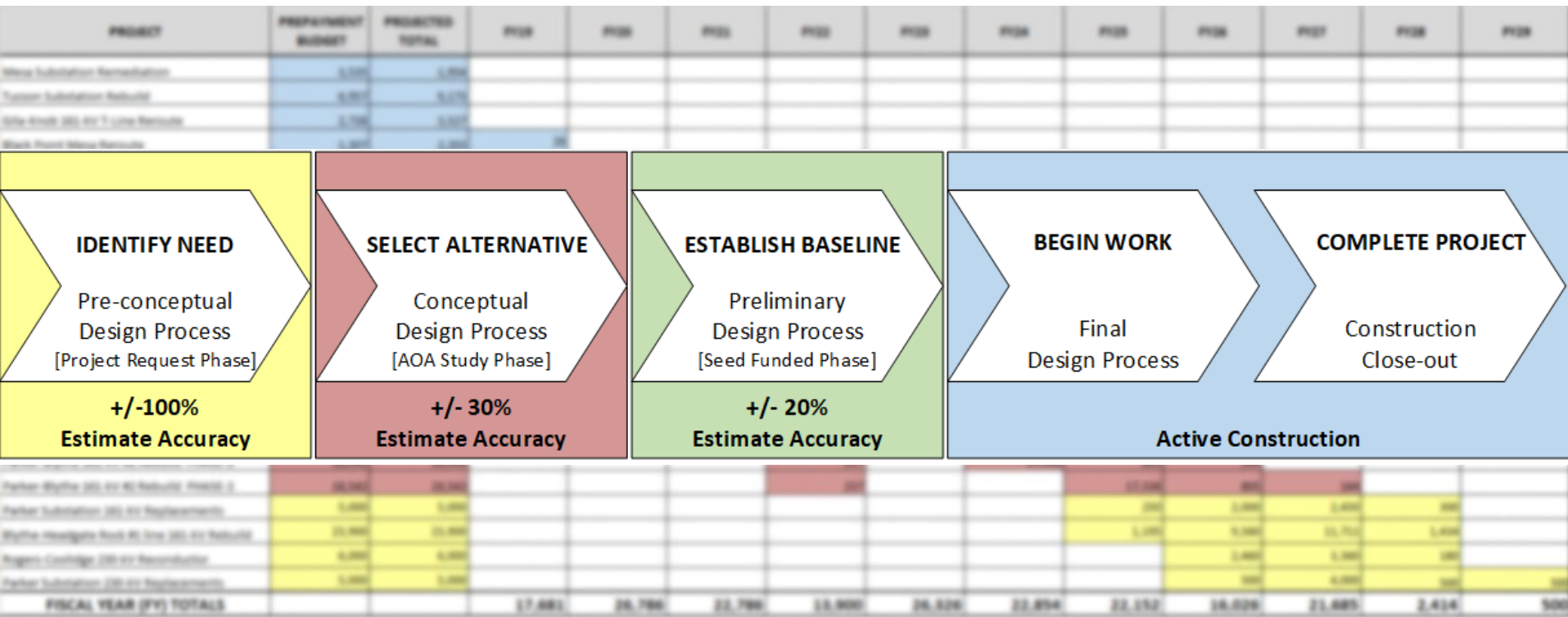


# Old 10-Year Plan

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Mesa Substation Remediation	3,535	1,954											
Tucson Substation Rebuild	6,957	9,173											
Gila-Knob 161-kV Reroute	2,728	3,527											
Black Point Mesa Reroute	1,307	2,203	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,587	3,207	50									
Liberty Series Capacitor Bank Replacement	6,595	9,857	2,622	100									
Gila Substation 161-kV to 230-kV Rebuild	17,223	20,296	1,367	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,535	429	26									
Coolidge-Valley Farms 115-kV Rebuild	3,350	3,350	2,523	719	50								
Gila-Dome Tap 161-kV Rebuild	7,630	7,630	6,289	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,330	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	5,000	5,000							250	2,000	2,450	300	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	5,000	5,000								500	4,000	500	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,681</b>	<b>26,786</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,152</b>	<b>16,026</b>	<b>21,685</b>	<b>2,414</b>	<b>500</b>

- This is the calendar year 2018 version of the Final 10-Year Plan
- Today we will create the calendar year 2019 Draft 10-Year Plan

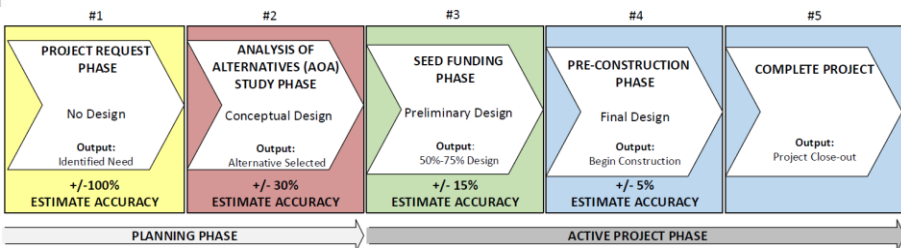




- As a reminder, the 10-Year Plan is color coded for the following criteria
  - Yellow – Project Request Phase – Pre-Conceptual Design
  - Red – AOA Study Phase – Conceptual Design – Conceptual Design
  - Green – Seed Funded Phase – Preliminary Design – Preliminary Design
  - Blue – Active Construction Phase – Final Design, Construction and Closeout



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Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
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Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
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<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,681</b>	<b>26,786</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,152</b>	<b>16,026</b>	<b>21,685</b>	<b>2,414</b>	<b>500</b>



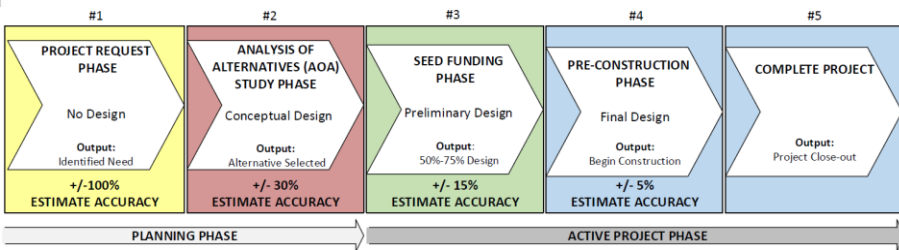
- As we explore each line item, the red box shown above will indicate what project we are currently discussing





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Mesa Substation Remediation	3,535	1,954

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<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,681</b>	<b>26,786</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,152</b>	<b>16,026</b>	<b>21,685</b>	<b>2,414</b>	<b>500</b>



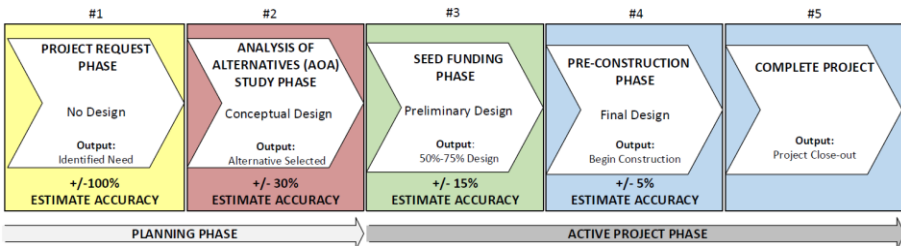
- The Mesa Substation Remediation closed out successfully in FY 2018 and is no longer part of the 10-Year Plan





PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19
Tucson Substation Rebuild	6,957	9,836	80

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Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,761</b>	<b>26,786</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

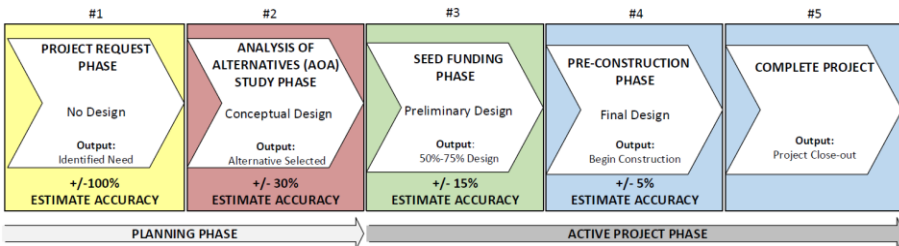


- The Tucson Substation was scheduled to complete in FY 2018 but incurred additional spending after the FY cutoff for the financial close out effort
- WAPA anticipates the project will be financially closed out in FY 2019



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19
Gila-Knob 161-kV T-Line Reroute	2,728	3,707	8

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<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,769</b>	<b>26,786</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

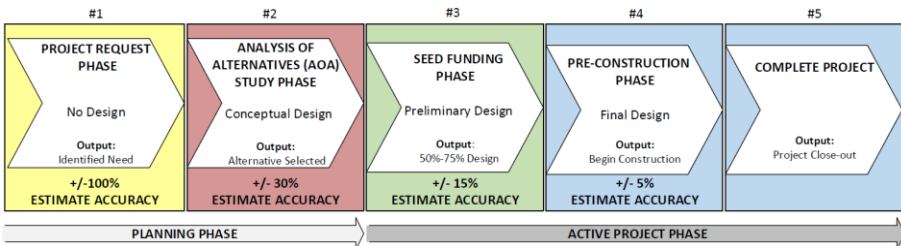


- The Gila Knob 161-kV T-Line was scheduled to complete in FY 2018 but incurred additional spending after the FY cutoff due to financial close out effort
- WAPA anticipates the project will be financially closed out in FY 2019



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19
Black Point Mesa Reroute	1,307	2,262	28

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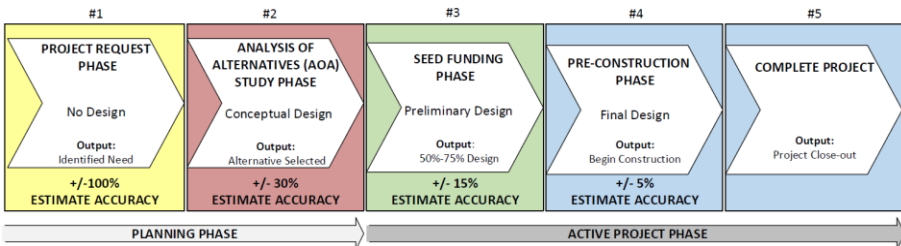


- The Black Point Mesa Project is on schedule with no changes from FY 2018
- WAPA anticipates the project will be financially closed out in FY 2019



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19
Parker-Davis Facility Rating Year 2	8,525	7,711	50

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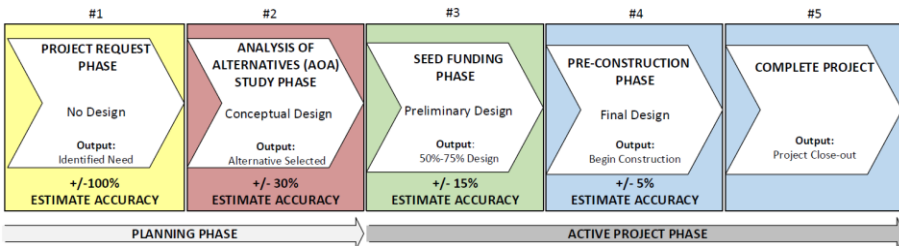
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PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20
Crossman Peak Microwave Facility	4,525	4,525	3,032	50

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Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,594</b>	<b>26,786</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

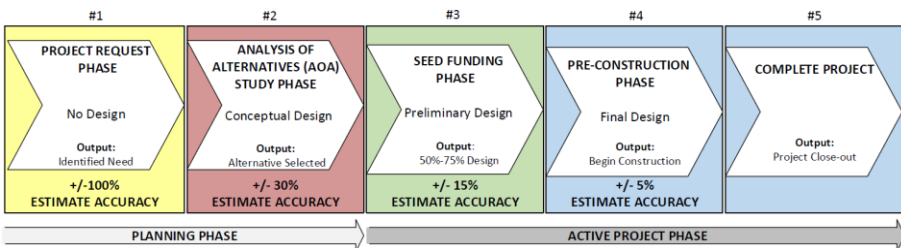


- As described in the Q1 10-Year Plan meeting, the project is on hold while WAPA investigates less costly sources of power for the microwave site



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,223	20,296	1,367	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,535	429	26									
Coolidge-Valley Farms 115-kV Rebuild	3,350	3,350	2,523	719	50								
Gila-Dome Tap 161-kV Rebuild	7,630	7,630	6,289	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,330	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,594</b>	<b>26,762</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>



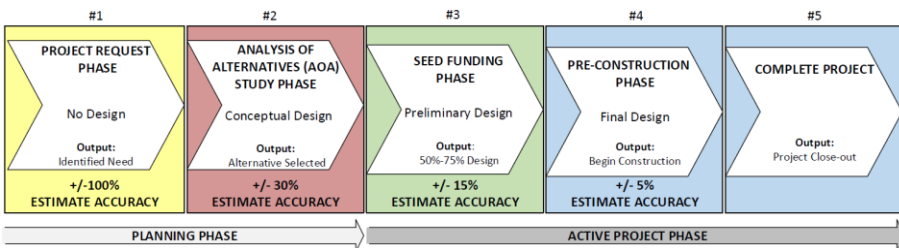
- The Liberty Series Capacitor Bank Project is on schedule with no changes from FY 2018
- WAPA anticipates the project will be financially closed out in FY 2020





PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,535	429	26									
Coolidge-Valley Farms 115-kV Rebuild	3,350	3,350	2,523	719	50								
Gila-Dome Tap 161-kV Rebuild	7,630	7,630	6,289	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,330	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,571</b>	<b>26,762</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

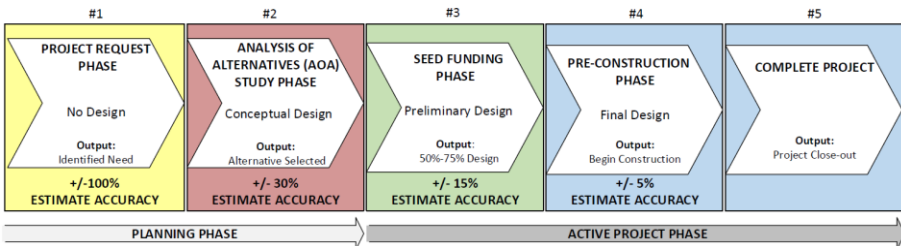


- The Gila 230-kV Substation Project will require additional funding to complete
- Currently the completion year is unchanged
- Need for additional funding includes site conditions and increased costs in raw materials, labor, and equipment



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	3,350	3,350	2,523	719	50								
Gila-Dome Tap 161-kV Rebuild	7,630	7,630	6,289	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,330	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>17,338</b>	<b>26,762</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

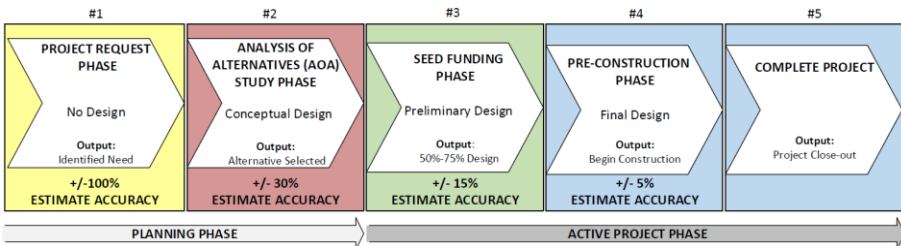


- The Gila-Wellton Mohawk I8 Crossing Project is on schedule with no changes from FY 2018
- WAPA anticipates the project will be financially closed out in FY 2020



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21
Coolidge-Valley Farms 115-kV Rebuild	3,350	3,350	1,536	719	50

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,630	7,630	6,289	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,330	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>16,351</b>	<b>26,762</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

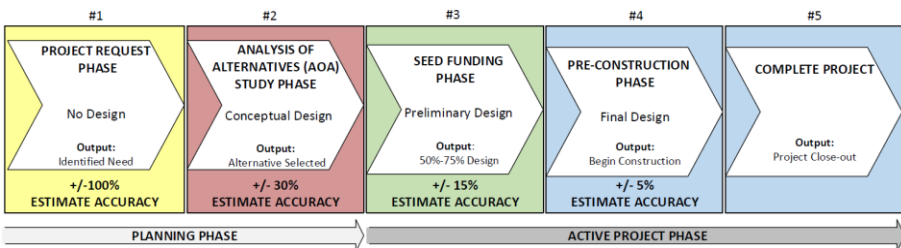


- The Coolidge-Valley Farms 115-kV Project has moved from Seed Funded to Active Construction Phase
- WAPA anticipates the project will be financially closed out in FY 2021



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21
Gila-Dome Tap 161-kV Rebuild	7,630	7,630	2,328	1,126	2

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,330	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,390</b>	<b>26,762</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>



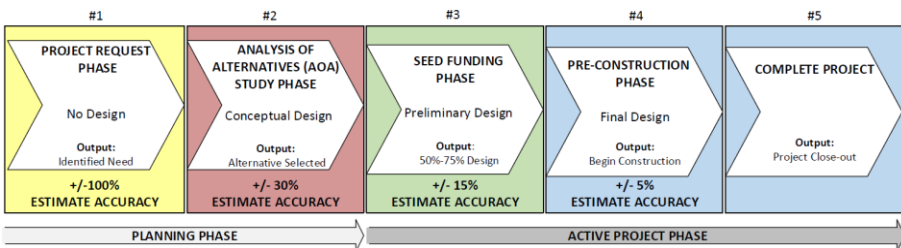
- The Gila-Dome Tap 161-kV Project has moved from Seed Funded to Active Construction Phase
- WAPA anticipates the project will be financially closed out in FY 2021





PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50

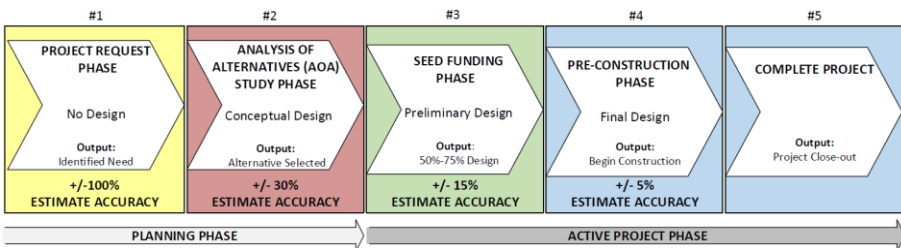
PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	816	18,128	14,711	835	3,402	4,257	2,402	537			
Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,390</b>	<b>26,762</b>	<b>22,786</b>	<b>13,900</b>	<b>26,326</b>	<b>22,854</b>	<b>22,202</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>



- The Kofa-Dome Tap 161-kV Project has moved from Seed Funded to Active Construction Phase
- WAPA anticipates the project will be financially closed out in FY 2022



	PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
	Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
	PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
	Tucson Substation Rebuild	6,957	9,836	80										
	Gila-Knob 161-kV Reroute	2,728	3,707	8										
	Black Point Mesa Reroute	1,307	2,262	28										
	Parker-Davis Facility Rating Year 2	8,525	7,711	50										
	Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
	Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
	Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
	Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
	Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
	Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
	Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
	Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
	Bouse-Kofa 161-kV Rebuild Phase-1	13,260	13,260		500	7,172	5,132	456						
	Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
	Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
	Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
	Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
	Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
	Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
	Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
	Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
	FISCAL YEAR (FY) TOTALS			12,033	9,634	26,203	27,776	23,759	26,256	21,739	22,126	24,935	12,364	500



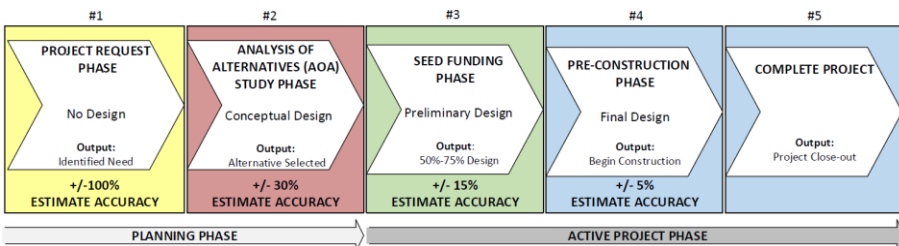
- The Bouse Upgrade Project has moved from AOA Study Phase to Seed Funded Phase
- The Seed Funded Phase will result in the project being divided into individual phases





PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY20	FY21	FY22	FY23
Bouse-Kofa 161-kV Rebuild PHASE-1	13,260	13,260	500	7,172	5,132	456

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconductor	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

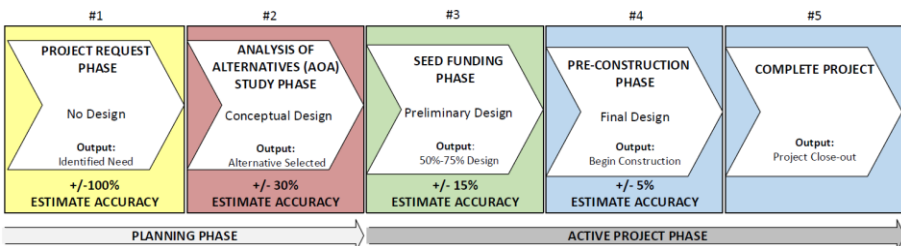


- The Bouse – Kofa 161-kV Phase-1 Project has moved from AOA Study Phase to the Active Construction Phase
- This project was included in the pivot so seed funding was not used
- WAPA anticipates the project will be financially closed out in FY 2023



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24
Bouse-Kofa 161-kV Rebuild PHASE-2	13,260	13,260	500		7,172	5,132	456

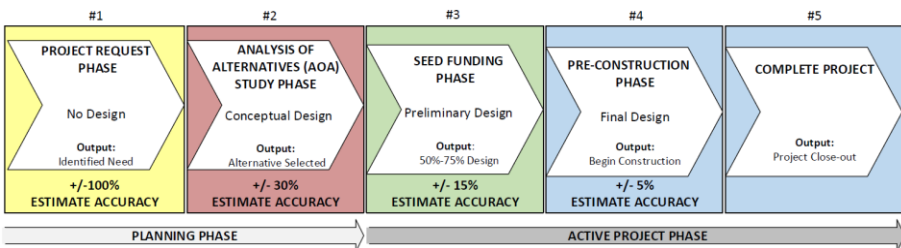
PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconductor	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>



- The Bouse – Kofa 161-kV Phase-2 Project has moved from AOA Study Phase to the Active Construction Phase
- This project was included in the pivot so seed funding was not used
- WAPA anticipates the project will be financially closed out in FY 2023



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconnector	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

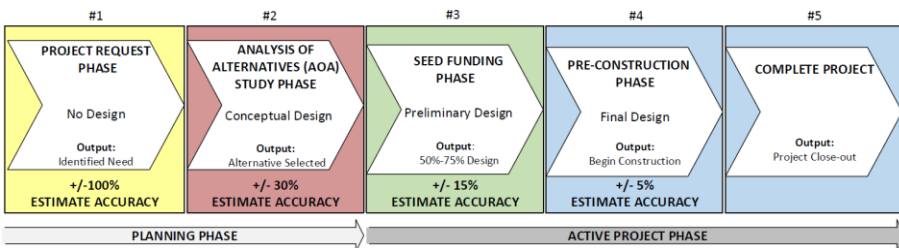


- The Parker Blythe #2 161-kV Rebuild is still in the AOA Study Phase



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY25	FY26	FY27	FY28
Parker Substation 161-kV Replacements	16,850	16,850	300	8,000	7,700	850

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconstructor	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>



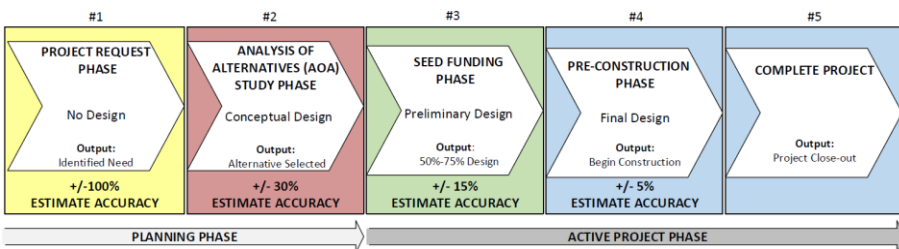
- Parker 161-kV Substation is in the Project Request Phase
- No AOA has been performed





PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY25	FY26	FY27	FY28
Blythe-Headgate Rock #1 line 161-kV Rebuild	23,900	23,900	1,195	9,560	11,711	1,434

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconstructor	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>

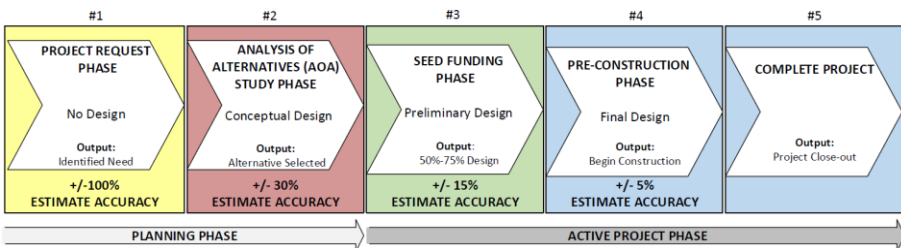


- Blythe-Headgate Rock 161-kV is in the Project Request Phase
- No AOA has been performed



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY26	FY27	FY28
Rogers-Coolidge 230-kV Reconductor	6,000	6,000	2,460	3,360	180

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Rogers-Coolidge 230-kV Reconductor	6,000	6,000								2,460	3,360	180	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>22,126</b>	<b>24,935</b>	<b>12,364</b>	<b>500</b>



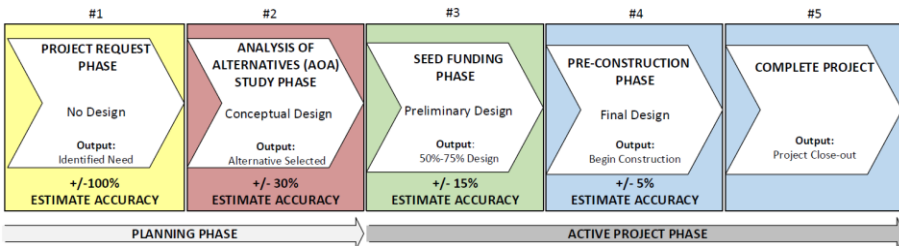
- Rogers-Coolidge 115-kV Project was originally requested to alleviate overloading issues in the area
- The overloads have since been rectified and the project is no longer needed





PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY26	FY27	FY28	FY29
Parker Substation 230-kV Replacements	13,000	13,000	600	2,000	9,900	500

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>19,666</b>	<b>21,575</b>	<b>12,184</b>	<b>500</b>

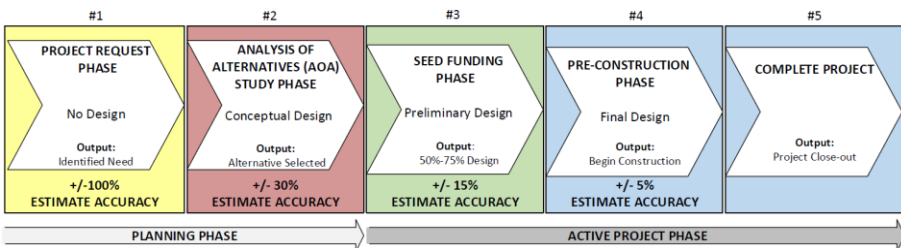


- Parker 230-kV Substation is in the Project Request Phase
- No AOA has been performed



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY27	FY28	FY29
Gila Substation 69KV	10,500	10,500	800	6,050	3,200

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
Gila Substation 69KV	10,500	10,500									800	6,050	3,200
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>19,666</b>	<b>22,375</b>	<b>18,234</b>	<b>3,700</b>

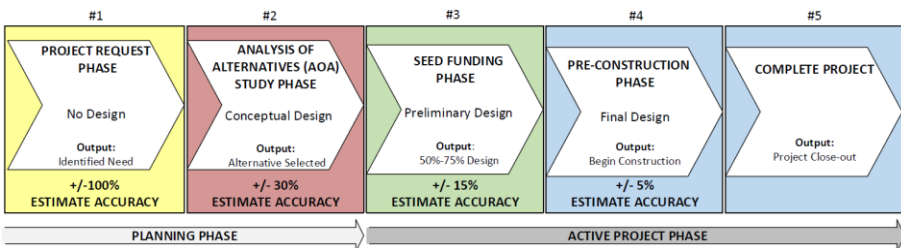


- Gila Substation 69-kV Rebuild has been identified as a project to be included in the 10-Year Plan based on its scoring in compliance, economics and reliability



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY28	FY29
Gila Knob Remaining Rebuild	23,000	23,000	800	16,700

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
Gila Substation 69KV	10,500	10,500									800	6,050	3,200
Gila Knob Remaining Rebuild	23,000	23,000										800	16,700
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>19,666</b>	<b>22,375</b>	<b>19,034</b>	<b>20,400</b>

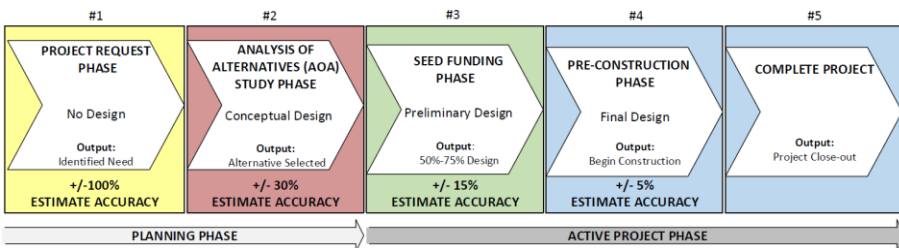


- Gila Knob 161-kV Remaining Rebuild Project has been identified as a project to be included in the 10-Year Plan based on its scoring in compliance, economics and reliability



PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY29
Gila Substation 34.5 / 14KV	15,250	15,250	500

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
Gila Substation 69KV	10,500	10,500											
Gila Knob Remaining Rebuild	23,000	23,000									800	6,050	3,200
Gila Substation 34.5 / 14KV	15,250	15,250											500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>19,666</b>	<b>22,375</b>	<b>19,034</b>	<b>20,900</b>



- Gila Substation 34.5-kV Rebuild has been identified as a project to be included in the 10-Year Plan based on its scoring in compliance, economics and reliability





# New 10-Year Plan

PROJECT	PREPAYMENT BUDGET	PROJECTED TOTAL	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Tucson Substation Rebuild	6,957	9,836	80										
Gila-Knob 161-kV Reroute	2,728	3,707	8										
Black Point Mesa Reroute	1,307	2,262	28										
Parker-Davis Facility Rating Year 2	8,525	7,711	50										
Crossman Peak Microwave Facility	4,525	4,525	3,032	50									
Liberty Series Capacitor Bank Replacement	6,595	10,372	2,622	76									
Gila Substation 161-kV to 230-kV Rebuild	17,112	22,291	1,344	1,637									
Gila-Wellton Mohawk I-8 Crossing Rebuild	7,242	7,520	196	26									
Coolidge-Valley Farms 115-kV Rebuild	2,305	3,350	1,536	719	50								
Gila-Dome Tap 161-kV Rebuild	7,130	7,630	2,328	1,126	2								
Kofa-Dome Tap 161-kV Rebuild	5,330	5,511	350	4,000	851	50							
Bouse Upgrade Project	45,088	45,088	459	1,000	18,128	14,711	835	7,659	1,939				
Bouse-Kofa 161-kV Rebuild Phase-1	13,167	13,260		407	7,172	5,132	456						
Bouse-Kofa 161-kV Rebuild Phase-2	13,260	13,260		500		7,172	5,132	456					
Parker-Blythe 161-kV #2 Rebuild Phase-1	18,542	18,542				237	17,336	805	164				
Parker-Blythe 161-kV #2 Rebuild Phase-2	18,542	18,542				237		17,336	805	164			
Parker-Blythe 161-kV #2 Rebuild Phase-3	18,542	18,542				237			17,336	805	164		
Parker Substation 161-kV Replacements	16,850	16,850							300	8,000	7,700	850	
Blythe-Headgate Rock #1 161-kV Rebuild	23,900	23,900							1,195	9,560	11,711	1,434	
Parker Substation 230-kV Replacements	12,100	12,100								600	2,000	9,900	500
Gila Substation 69KV	10,500	10,500									800	6,050	3,200
Gila Knob Remaining Rebuild	23,000	23,000										800	16,700
Gila Substation 34.5 / 14KV	15,250	15,250											500
<b>FISCAL YEAR (FY) TOTALS</b>			<b>12,033</b>	<b>9,541</b>	<b>26,203</b>	<b>27,776</b>	<b>23,759</b>	<b>26,256</b>	<b>21,739</b>	<b>19,666</b>	<b>22,375</b>	<b>19,034</b>	<b>20,900</b>

- This is the Parker Davis and Intertie Draft 10-Year Plan for Fiscal Years 2020-2029
- Any changes that occur to this 10-Year Plan will be documented and explained fully at the Q3 customer meeting



# RESERVE BALANCES REPORT





# Reserve Balances Strategy

- <https://www.wapa.gov/About/Documents/financial/unobligated-balances-strategy.pdf>
- O&M
  - One quarter's annual budget plus 21 days
  - Contingency for Continuing Resolution and/or Government shutdown
- Capital
  - Three years
  - Support the near-term alternatively financed capital and construction program projects
- PPW
  - Highest 3-year cumulative actual amount of net energy needed to meet Pick-Sloan Program's contractual energy obligations (2005-2007)



# DSW Reserve Balances

- Due to increase in receipts and higher than anticipated use of appropriations, DSW is projecting to exceed the Capital Reserve Balances Strategy
- FY19 End of Year Reserve Balances Strategy
  - \$59,494,000
- Current projection
  - \$71,672,181
- Need your support to carry approx. \$12M over the Reserve Balances Strategy



# Questions

Jennifer Hultsch

Supervisory Budget Analyst

[Hultsch@wapa.gov](mailto:Hultsch@wapa.gov)

602-605-2600



# BOUSE UPGRADE PROJECT

**Project Request Phase**

**AOA Study Phase**

**Seed Funding Phase**

**Active Construction Phase**





# Bouse Upgrade Project

## Project History

- The Parker-Headgate and Parker-Bouse 161-kV transmission lines are in a state of disrepair and a rebuild project was initiated in 2013
- The project encountered difficulties in design so WAPA began investigating alternatives
- The Bouse Upgrade Project is the result of that effort



# Bouse Upgrade Project

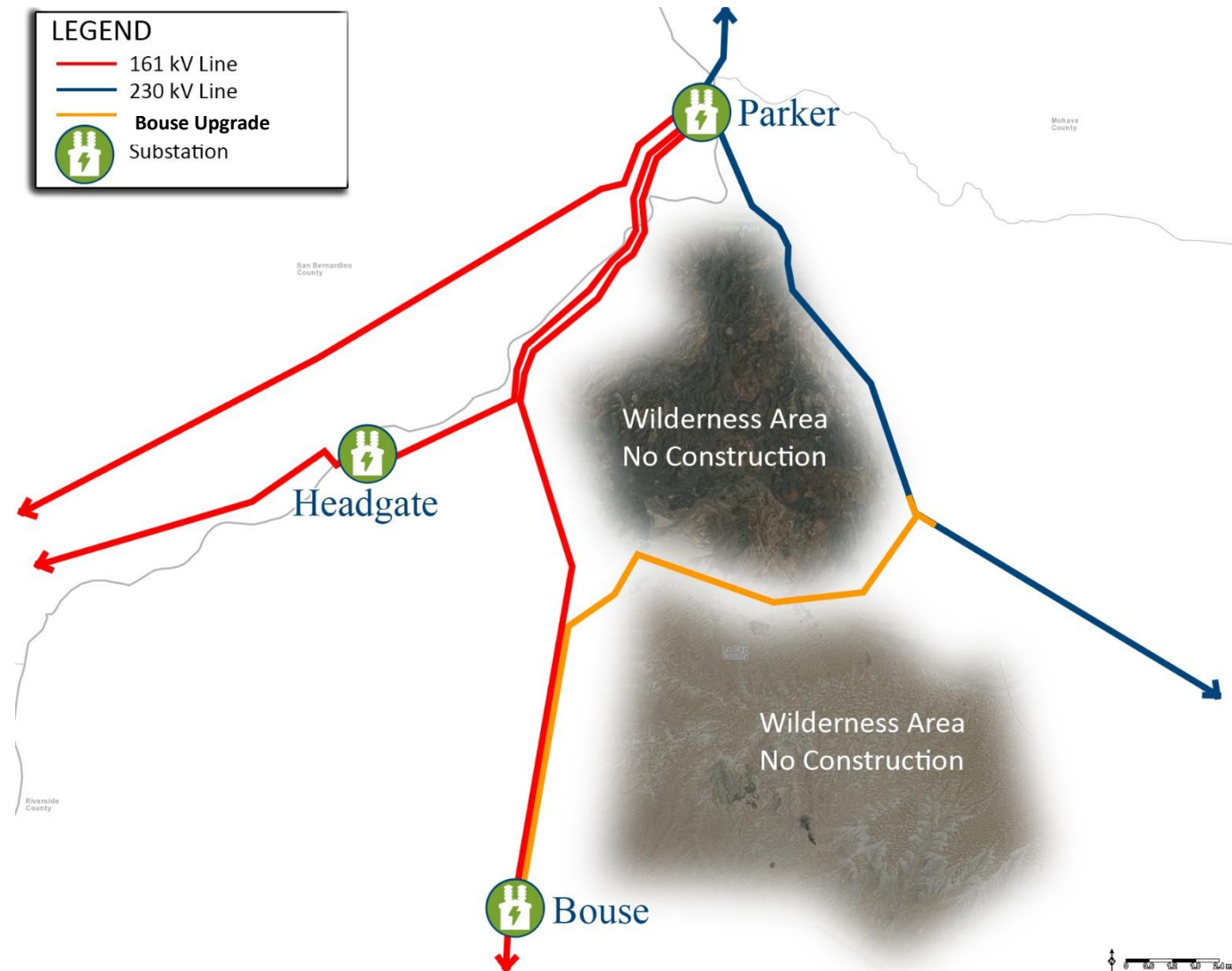
## Project Status

- The Bouse Upgrade Project is currently undergoing preliminary design via seed funding, this provides several benefits:
  - Significant issues can be identified before the project is fully funded
  - The accuracy of the final estimate for the cost of the project will be improved
  - Preliminary environmental, geological, biological and cultural work will occur before final estimated schedule and cost are determined
  - Appropriations are used for seed funding

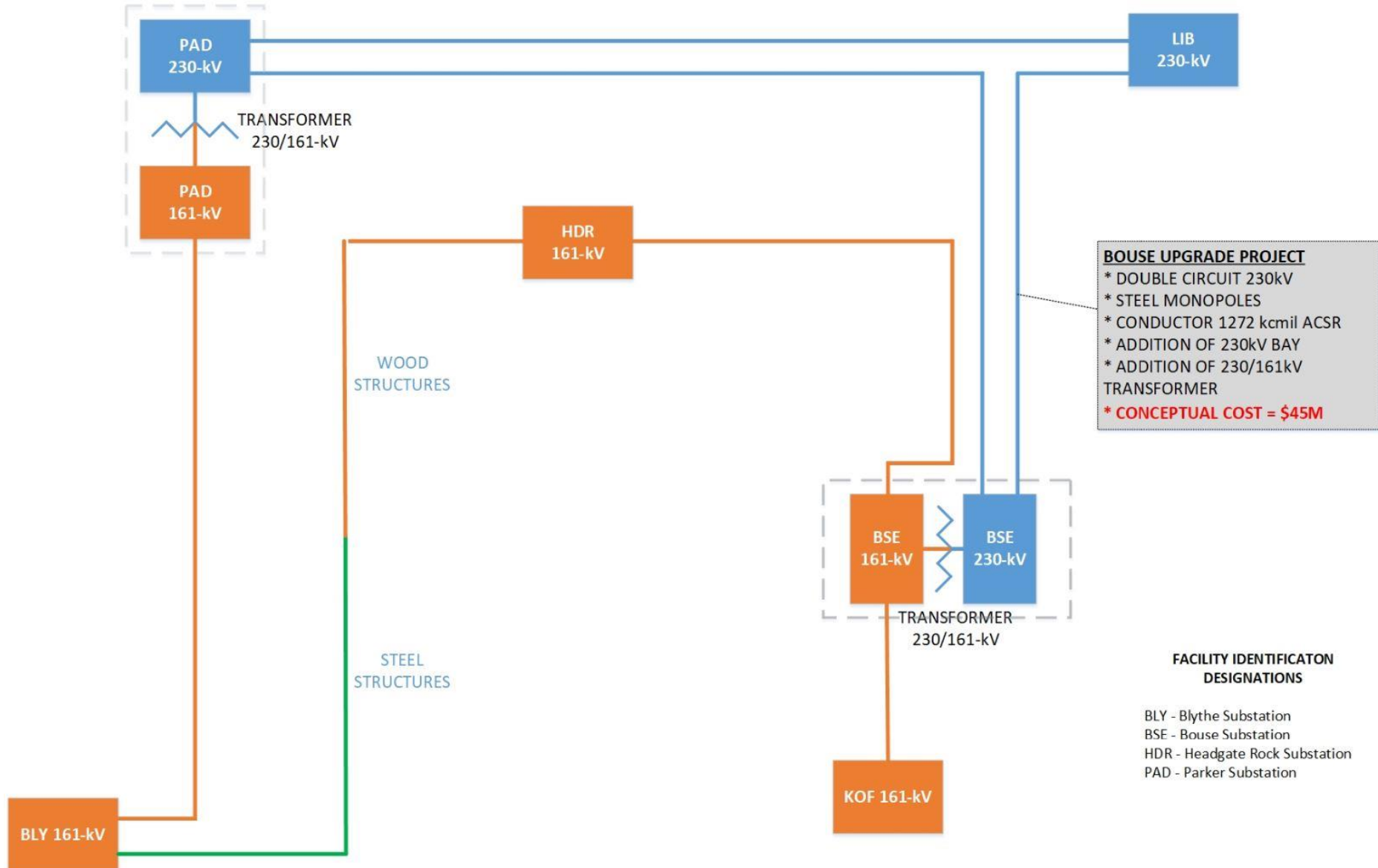


# Bouse Upgrade Project

- During the Seed Funding Phase, two wilderness areas were identified that interfered with the original transmission path from the the AOA study.
- An alternative transmission path was identified that successfully weaves between the two sensitive areas, with a minimal increase in total transmission line length
- This solution illustrates the value of WAPA engaging its environmental group in the seed funding process



# Bouse Upgrade Project





# Bouse Upgrade Project

## **Prepayment Vote – Full Project Funding**

- The Bouse Upgrade was originally scheduled to be voted on this December, 2019
- Due to the magnitude of this project the seed funding phase will be extended through 2020
- This is to facilitate continued coordination with the BLM and to make certain that environmental and cultural sensitivities can be fully addressed
- This extension will also allow additional time for further engagement with stakeholders on the status and future development of the project



# Parker-Blythe #2 Rebuild

**Project Request Phase**

**AOA Study Phase**

**Seed Funding Phase**

**Active Construction Phase**



# Parker-Blythe 161-kV AOA

## Project History

- The Parker-Blythe Rebuild was identified as WAPA's final Pivot Project approximately two years ago
- This rebuild project has been discussed at several previous 10-Year Plan presentations
- What follows is a refresher on the need for the project and the scope of work to be performed



# Parker-Blythe 161-kV AOA

## Transmission Line Details

- 64 miles of wood pole transmission line built in 1969
- Single circuit 954 kcmil ACSR
- H-frame wood pole structures with 3-pole angle structures
- ROW crosses Arizona and California state lines
- Incredibly rough terrain for large sections of the line
  - Directly west of Parker Substation the terrain is very mountainous with limited access
  - Further south lies open desert with sand dunes crossing WAPA's ROW
- Area outside of Parker Substation is heavily congested with transmission lines
- Current ROW held by WAPA is perpetual and redirecting line would cause the loss of that easement



# Parker-Blythe 161-kV AOA

## Project Justification

- 80% of the wood poles are rejected/require replacement
- Five NERC/NESC clearance violations requiring engineering fix
- Repair/Reclaim ROW access
- 20% of the structures (100+) require dozer tow-in for access
- Additional communication bandwidth is required via fiber optic ground wire to meet current and future protection, control, communication, and security requirements





# Parker-Blythe 161-kV AOA



# Parker-Blythe 161-kV AOA

## Project Scope

“Alternative 3a” was identified as the preferred alternative, it consists of:

- New conductor, insulators, and hardware
- Upgrade all wood poles structures to light duty steel H-frame structures
- Install steel dead-end structures as required by design
- Add optical overhead ground wire (OPGW)
- Repair/reclaim ROW access
- Design using 230-kV standards/specifications operated at 161-kV to help standardize maintenance and improve availability of replacement/equipment



# Parker-Blythe 161-kV AOA

## FY22-27 Proposed Project: Phase I, II and III – Alternate 3a

*WAPA is investigating a single design package, with three solicitation packages for procurement of separate construction contracts for each phase.*

- Phase I – Cost \$18.52M
  - *Proposed for FY22 start*
  - *~21 miles of rebuild from Parker Substation heading south*
- Phase II - Cost \$18.52M
  - *Proposed for FY23 start*
  - *~22 miles of rebuild from the end of Phase I to the start of Phase III*
- Phase III - Cost \$18.52M
  - *Proposed for FY24 start*
  - *~21 miles of rebuild from Phase II to Blythe Substation*

*Phasing allows for potential concurrent construction of phases in a single outage window, thereby reducing total project duration and improving constructability within difficult terrain.*



# Parker-Blythe 161-kV AOA

- What you have seen up to this point is the preferred alternative as it has been presented over the last 2 years
- DSW would now like to share a strategic potential alternative that may result in a net savings to the 10-Year Plan



# Parker-Blythe 161-kV Alternative

## New Alternative History

- During the Bouse Upgrade Project's preliminary design some questions were raised internally about the design of new transmission structures and future needs in the region
- As a result of these inquiries a reliability assessment was performed for the Parker, AZ region
- It was identified that the Parker-Blythe #2 line could potentially be decommissioned with low impact to the system





# Parker-Blythe 161-kV Alternative

## Alternative Impact

The de-commissioning of Parker-Blythe #2 could have several Pros and Cons, though further study would be required to arrive at a data driven determination.

### PRO

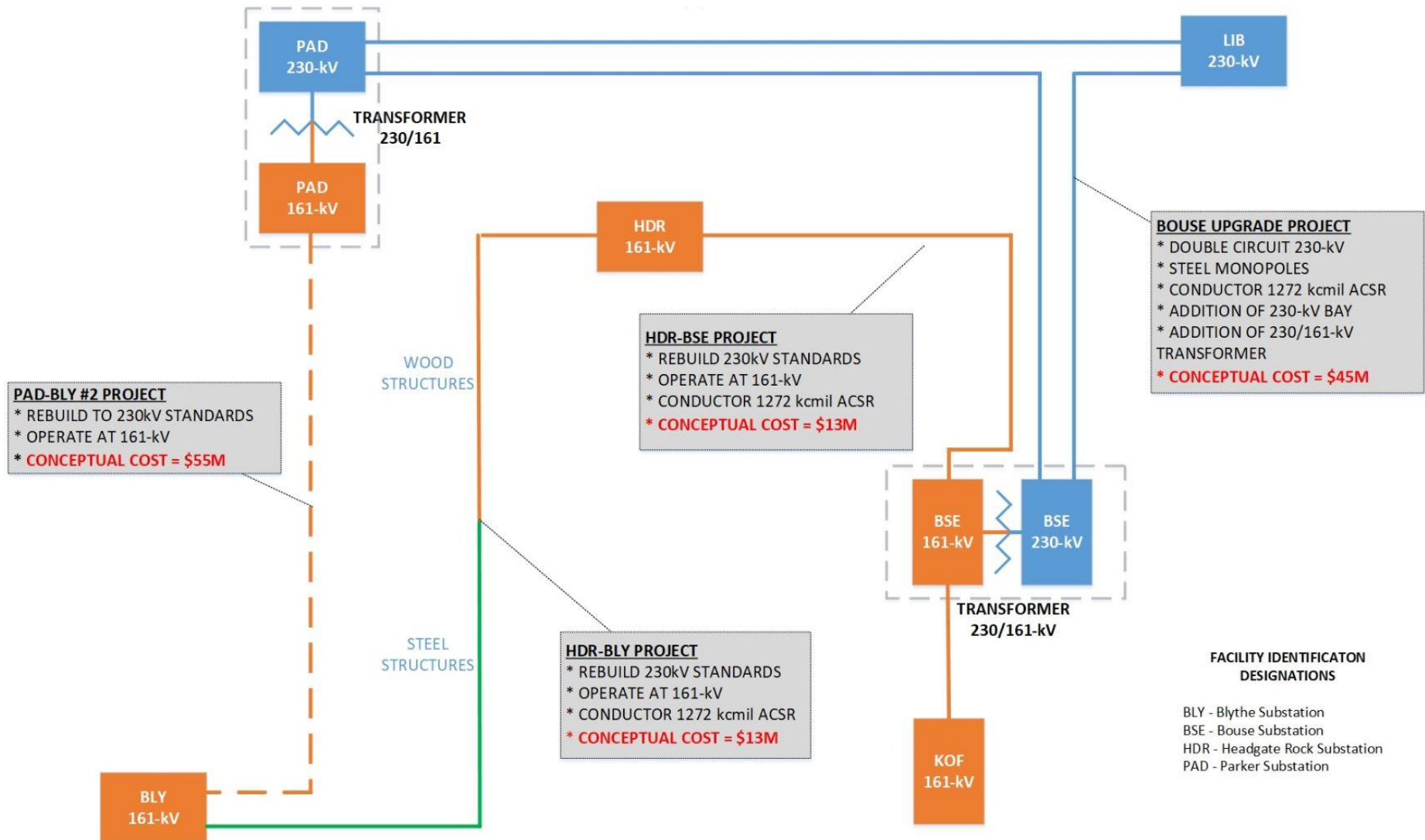
- No further need to perform maintenance on 63 Miles of difficult to access transmission line
- Project to rebuild was slated at ~\$55M, which would no longer be required
- Parker Substation would no longer have any DSW lines requiring the 161-kV Upper Bay (with the completion of the Bouse Upgrade Project)

### CONS

- At this time it's unknown the impact to scheduling rights this project will have
- Increased Risk due to reduction of lines entering Blythe substation
- Potential issues with ease of maintenance due to outage restrictions
- Potential Right of Way impacts are currently unknown



# Parker-Blythe 161-kV Alternative



# Parker-Blythe 161-kV Alternative

## Questions

- Note that a Special Working Session Customer Meeting is being planned to discuss this potential alternative in detail
- An email invitation for that meeting will be going out at the conclusion of this meeting
- If there are any high level questions about this development they can be addressed now



# DRAFT 10-YEAR PLAN RATE IMPACT



# Rates Overview/Design

- Parker-Davis Project and Intertie rates and charges are forward looking, meaning they are determined based on projections of future costs
- Expenses include O&M, PPW, and repayment of capital
- Repayment of capital includes existing unpaid investments (assets) as well as projections of future investments
- Repayment of capital is independent of how the investments were or will be funded
- All investments are repaid whether they are funded by appropriations or alternatively financed





# Rate Impacts

- Projects become repayable the year after placed in service
- Project costs include Interest During Construction
- Different repayment methodologies
  - Parker-Davis Project: 5-year rate window using an average of future capital costs
  - Intertie: 50-year rate window, pinch-point (highest year of costs)



# Parker Davis Project Rate Impacts

**NOTE: FY 2019 Rate without Future Capital**

**\$18.00 / kW-Year**

PROJECT	In Service Date	Interest Rate	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Prior Year Projects (Pending Closeout)/Capitalized O&M	2019 +	various	\$ 0.14	\$ 0.35	\$ 0.48	\$ 0.58	\$ 0.70	\$ 0.80	\$ 0.91	\$ 1.02	\$ 1.12	\$ 1.18
Tucson Substation Rebuild	2019	3.000%	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17
Gila-Knob 161-kV T-Line Reroute	2019	3.000%	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06
Black Point Mesa Reroute	2019	3.000%	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04
Parker-Davis Facility Rating Year 2	2019	3.000%	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13
Crossman Peak Microwave Facility	2020	3.000%		\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07	\$ 0.07
Gila Substation 161-kV to 230-kV Rebuild	2020	3.000%		\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37
Gila-Wellton Mohawk I-8 Crossing Rebuild	2020	3.000%		\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12
Coolidge-Valley Farms 115-kV Rebuild	2021	3.000%			\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06
Gila-Dome Tap 161-kV Rebuild	2021	3.000%			\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13
Kofa-Dome Tap 161-kV Rebuild	2022	3.000%				\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09
Bouse Upgrade Project	2025	3.000%							\$ 0.79	\$ 0.79	\$ 0.79	\$ 0.79
Bouse-Kofa 161-kV Rebuild PHASE-1	2023	3.125%					\$ 0.23	\$ 0.23	\$ 0.23	\$ 0.23	\$ 0.23	\$ 0.23
Bouse-Kofa 161-kV Rebuild PHASE-2	2024	3.125%						\$ 0.23	\$ 0.23	\$ 0.23	\$ 0.23	\$ 0.23
Parker-Blythe 161-kV #2 Rebuild PHASE-1	2025	3.375%							\$ 0.33	\$ 0.33	\$ 0.33	\$ 0.33
Parker-Blythe 161-kV #2 Rebuild PHASE-2	2026	3.375%								\$ 0.34	\$ 0.34	\$ 0.34
Parker-Blythe 161-kV #2 Rebuild PHASE-3	2027	3.375%									\$ 0.34	\$ 0.34
Parker Substation 161-kV Replacements	2028	3.625%										\$ 0.31
Blythe-Headgate Rock #1 line 161-kV Rebuild	2028	3.625%										\$ 0.44
Parker Substation 230-kV Replacements	2029	3.625%										
Gila Substation 69KV	2030	3.625%										
Gila Knob Remaining Rebuild	2031	3.625%										
Gila Substation 34.5 / 14KV	2032	3.625%										
<b>Total</b>			<b>\$ 0.53</b>	<b>\$ 1.31</b>	<b>\$ 1.62</b>	<b>\$ 1.82</b>	<b>\$ 2.16</b>	<b>\$ 2.49</b>	<b>\$ 3.72</b>	<b>\$ 4.16</b>	<b>\$ 4.60</b>	<b>\$ 5.42</b>

P-DP 5-year Rate Window



# Intertie Rate Impacts

PROJECT	In Service Date	Interest Rate	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Prior Year Projects (Pending Closeout)/Capitalized O&M	2019 +	3.000%	\$ 0.02	\$ 0.13	\$ 0.25	\$ 0.31	\$ 0.37	\$ 0.42	\$ 0.48	\$ 0.53	\$ 0.59	\$ 0.62
Liberty Series Capacitor Bank Replacement	2020	3.000%		\$ 0.32	\$ 0.32	\$ 0.32	\$ 0.32	\$ 0.32	\$ 0.32	\$ 0.32	\$ 0.32	\$ 0.32
<b>Total</b>			<b>\$ 0.02</b>	<b>\$ 0.45</b>	<b>\$ 0.57</b>	<b>\$ 0.64</b>	<b>\$ 0.69</b>	<b>\$ 0.74</b>	<b>\$ 0.80</b>	<b>\$ 0.86</b>	<b>\$ 0.91</b>	<b>\$ 0.94</b>



# Capital O&M (aka RRADs) REVIEW



# Capital O&M Review

Transition from “RRADS” term to “Capital O&M”

- Replacements, Retirements, Additions and Deletions (RRADs) has been found to be an outdated and misleading term
- WAPA finds the use of the term “Capital O&M” is a more precise and clear term for this type of work being done
- Transition from “RRADS” to “Capital O&M” was initiated in April 2019 in Ten Year Plan and Work Plan materials



# Capital Maintenance Review

- FY19 thru FY21 have Work Plan Submissions that are locked
- FY22 Budget Submission is being worked on by all DSW Organizations; it has not been approved for Budget Submission
- FY23 thru FY28 are planned Budgets at this point in time
- A revalidation of the Capital Maintenance Program is done in the year of execution to ensure program needs are met, this does not mean an increase in our budgeted program dollars but a reprogramming of planned projects





# Common SCADA/EMS Vendor Project Background

- FY19 all region plan for the purchase of a common SCADA/EMS
- Agency has four separate regions with six SCADA/EMS
- Three active systems of the six provide visibility and control
- Remaining systems are in Standby mode.
- The three system installations include two different COTS software
- One in-house developed SCADA/EMS product (UGP PCS) that is paired with a COTS
- All three active systems provide operators from a primary and alternate location
- Providing for continuity of operations if a location becomes uninhabitable or is destroyed.
- These systems evolved independently and utilize different hardware, software and maintenance arrangements.
- The support staff from each region have limited familiarity with the other systems in use, resulting in minimal synergy.
- System operators and transmission planners do not use common, WAPA-wide tools.



# Common SCADA/EMS Vendor Project Selection Methodology

Our business case evaluated viable options for selection of a Common SCADA/EMS Solution. And as part of the project due diligence associated with generating the project's [Request for Information](#) (RFI), we formed a WAPA-wide team that formulated over 470 unique, detailed technical requirements covering 20 points of focus and 48 open-ended vendor questions covering the following eight areas:

- Vendor Information/Experience
- Cyber-Security
- System Architecture
- Product Development Planning
- Implementation Services
- SCADA/EMS Training
- Model Support
- Certification/Auditing/Standards



# Common SCADA/EMS Vendor Project

## Current State and Financials

- Duplication of effort across regions maintaining and upgrading three different SCADA/EMS solutions with new technologies on a periodic basis.
- Each region has upgrade projects to complete this year.
- UGP region employs internal development personnel to maintain/upgrade the PCS SCADA software in conjunction with [SWPA](#).
- Currently SWPA and UGP PCS are on two different code paths
- UGPs upgrade project involves merging code
- QA testing
- User and support staff education
- FERC Order 693-A established reliability standards that require compliance with various standards.

Year	Budget	Description	Region
FY19	\$ 3,250,000	Licensing	All
FY20-21	\$ 2,840,000	Installation and Deployment	SNR
FY21-22	\$ 2,840,000	Installation and Deployment	UGP
FY23-24	\$ 2,840,000	Installation and Deployment	DSW/RMR



# Wood Pole Replacement Program

## Program Overview

- Remediation of wood pole infrastructure with a focus on areas of advanced deterioration
- Segments identified by assessment of inspection reporting data and anticipated long term planning
- Blythe-Knob (86mi) remediation initiated in FY18

Maintenance Priority Codes

<b>A</b>	Good or like new. No action required.
<b>B</b>	Minor defect. Monitor degradation.
<b>C</b>	Moderate defect. Rehabilitation or replacement recommended as scheduled maintenance.
<b>D</b>	Serious defect. Repair, reinforce, or replace as soon as possible.
<b>E</b>	Risk to public safety or system reliability.

### BLY-KNB

#### May 2017 Status

Row Labels	B	C	D	E	Grand Total
Anchor	1	3			4
Brace	15	221	5		241
Crossarm	111	201	25		337
Foundation	1				1
Guy	4	7			11
Insulator	13	20	1	1	35
Phase/Conductor	2	5			7
Pole	116	188	230	1	535
Pole Hardware	3	8			11
Signs			3		3
Static Wire	9	49	2	9	69
Structure					0
Grand Total	275	702	266	11	1254

### BLY-KNB

#### April 2019 Status

Row Labels	B	C	D	E	Grand Total
Anchor					0
Brace	2	80	4		86
Crossarm	19	49	13		81
Foundation					0
Guy	1	14			15
Insulator	1	4			5
Phase/Conductor	1	1			2
Pole	43	92	76		211
Pole Hardware		1	1		2
Signs			3		3
Static Wire		3	3		6
Structure					0
Grand Total	67	244	100	0	411

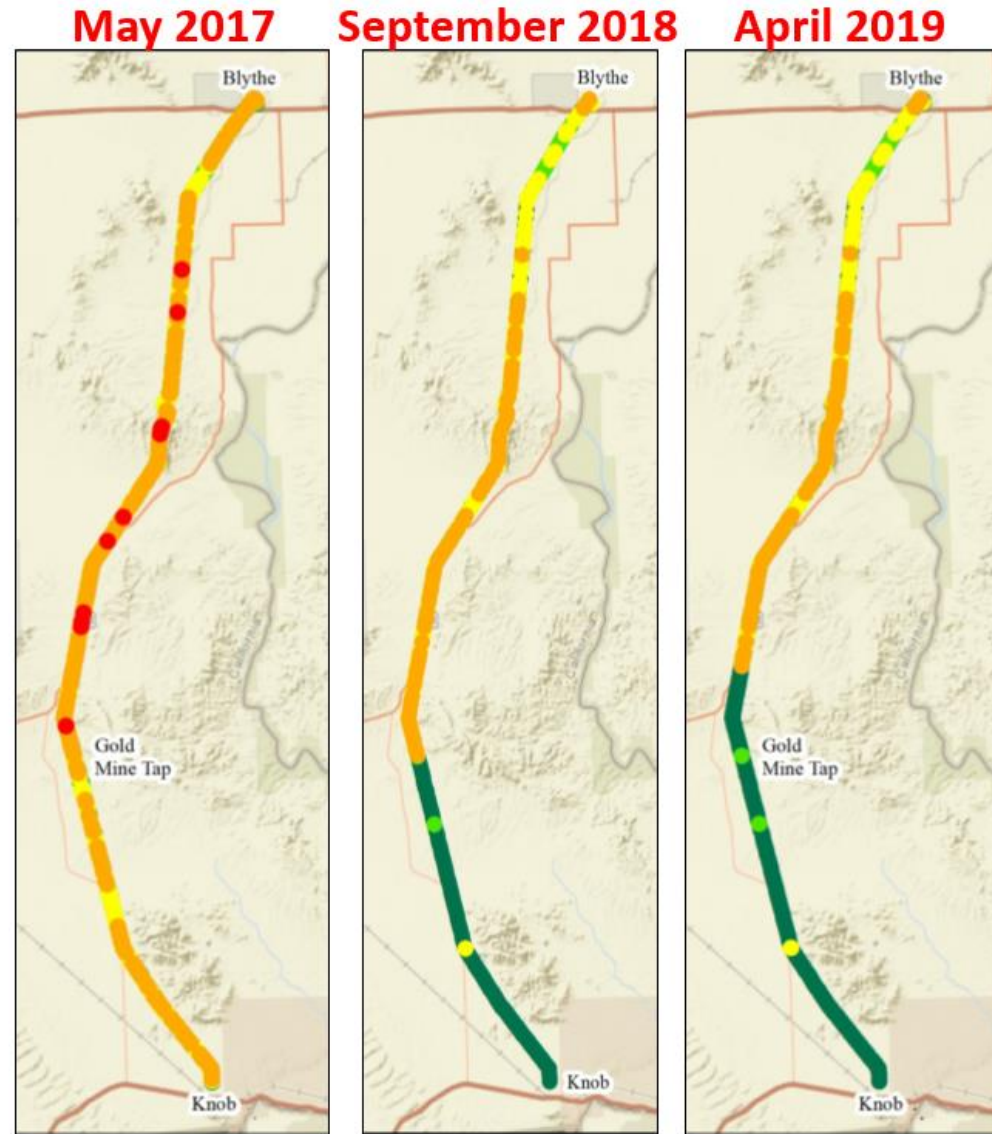


# Wood Pole Replacement Program

- Replacing all wood structures and insulators in-kind, re-using conductor
- Sustain ~\$3M/year (50/50 labor & materials)
- Most materials have been purchased for entire length
- Anticipated completion in FY23 with an approximate total cost of \$16M

Maintenance Priority Codes

A	Good or like new. No action required.
B	Minor defect. Monitor degradation.
C	Moderate defect. Rehabilitation or replacement recommended as scheduled maintenance.
D	Serious defect. Repair, reinforce, or replace as soon as possible.
E	Risk to public safety or system reliability.





# Bucket Truck Replacement

- Current equipment is 2006 125' Altec bare hand bucket truck
- Reasons for Replacement:
  - End of lifecycle
  - Increased Regulations (CARB)
  - Expensive to operate & maintain
  - Consistent Reliability Issues & Performance Risk
- Budgeted for 200' bare hand bucket truck (\$2.3M) in FY21 to increase capability throughout system. Considering a 150' bare hand bucket truck as an alternate option with less cost (~\$1.4M).

CURRENT 125' Altec



SAMPLE 200' Bronto



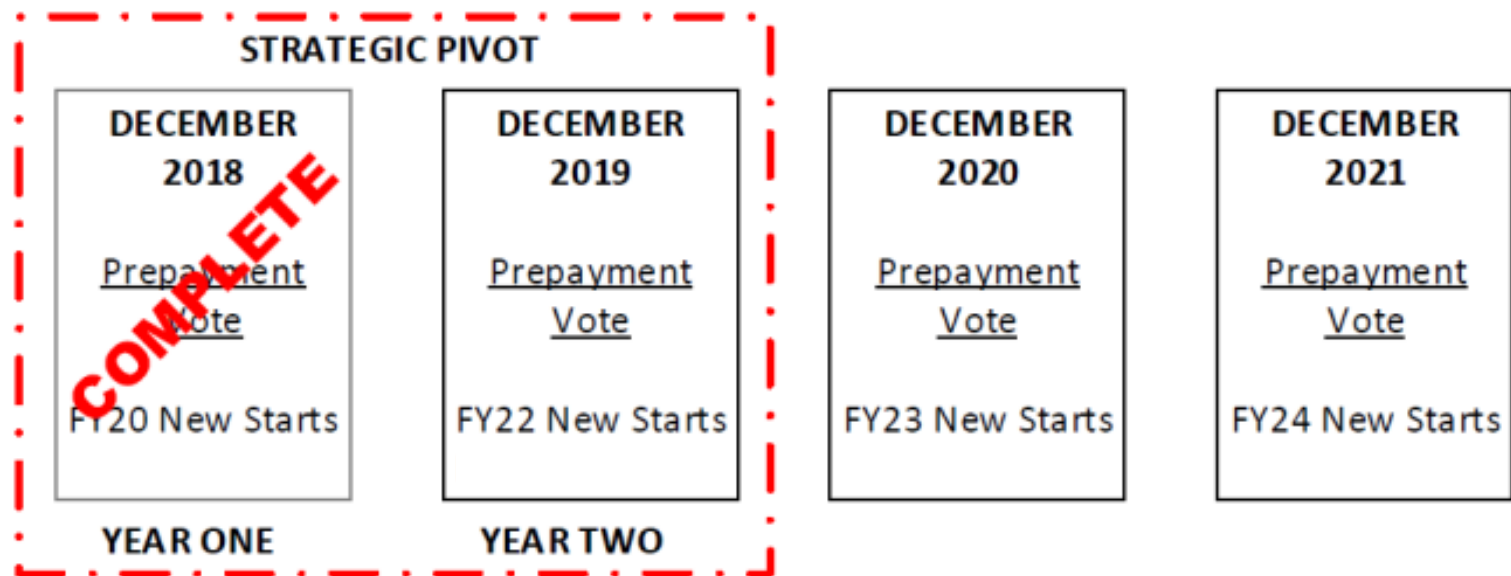


# NEXT STEPS



# Next Steps

- A working session will be hosted August 15<sup>th</sup> to discuss the Parker Blythe #2 Alternative
  - This working session will also be used to discuss DSW's seed funding program
- The Formal 10-Year Plan presentation is being held October 30<sup>th</sup>
- The Prepayment Vote meeting will occur December 10<sup>th</sup>



# THANK YOU

